PRO RX T2 with Decoder

Pro Rx-T2 DVB-T/T2 RF signal receiver with Decoder

PRO RX T2 with decoder

Main Features

DVB-T2 signal reception features:
- Automatic L1 signaling decoding.
- Fully compliant to all the standard Guard Intervals; Code Rates, Constellations.
- Provides manual selection of a single stream from single or multiple PLP input signal.
- Automatic output constant stream rate;

DVB-T signal reception features:
- Automatic TPS signaling decoding;
- Fully compliant to all the standard Guard Intervals; Code Rates, Constellations.
- Fast automatic 2k – 8k acquisition.
- Automatic spectral inversion.

Pro Rx T2 provides the following monitoring and statistics:
- SNR estimation.
- MER measure.
- Pre LDPC, BCH BER.
- Post BCH FER (FEC block Error Rate).
- Percentage signal quality.
- P1 parameters monitoring.
- L1 pre/post parameters monitoring.

1 x RF Input for each receiver board
- Frequency: 42 to 866 MHz

1 x Common Interface (for each receiver)
Connector used as input CAM
- Connector type: PCMCIA
- DVB-CI EN 50221-1997

1 x FastEthernet (Management)
- Connector: RJ45
- Standard supported: IEEE 802.3

3 x ASI Output (same content)
- TS Descrambled (TSD)
- Connector type: BNC
- Input: 75 ohm, 800 mVpp (500 to 1200mVpp)
- MPEG-2 TS ISO/IEC 13818-1
- CEI EN 50083-9,

Management of the devices is made through:
- Java GUI on Ethernet connection.
- SNMP agent.

Power Supply
- Dual Power Supply (only in 1+1 or 2+0 configuration)
- 110/220V AC Auto Switching
- 48V DC (Option on Request)

Description

The PRO-RX T2 is a multi-standard (DVB-T and DVB-T2) receiver, with integrated DVB-T and DVB-T2 receiver, DVB descramblers and a DVB decoder.
Pro Rx-T2 receives a RF signal modulated with standard ETSI EN 302755 or ETSI EN 300744, demodulates it and output a MPEG-2 TS over ASI. The on-board PCMCIA slot provides common interface connection to descramble encrypted contents. PRO-RX T2 receiver is designed to receive a TV signal, complying with ETSI EN 302 755 v1.2.1_0.11 (2009-2010) or ETSI EN 300 744, at a given frequency, demodulate it, decode the Transport Stream, descramble selected services and output the stream over ASI interface. As alternative to RF signal, it can directly receive an MPEG Transport Stream, complying with ISO/IEC standard 13818-1 (or ITU-T Rec. H.222.0), decode it, descramble selected services and output the stream over ASI interface. PRO-RX T2 receiver can operate either as DVB-T or as DVB-T2 receiver.

One of the main feature of PRO-RX T2 is the monitoring of all parameters of demodulation process both for DVB-T and for DVB-T2 input signal. Furthermore, it provides the plots of actual Constellation and Channel Impulse Response.

PRO-RX T2 with decoder works also as Decoder. It takes the demodulated and descrambled TS, then decodes and outputs a selected service through several physical interfaces, in order to connect the outputs directly to the TV

Audio/Video decoder section description:

Video standard supported:
- H.264/AVC: Level 4.1 high profile video decoder
- MPEG-2: MP@HL

HD video resolution supported:
- 1920x180i30
- 1920x1080i25
- 1280x720p60
- 1280x720p50

SD video resolution supported:
- 720x576i25 compliant PAL-BG
- 720x576i29 compliant PAL-M
- 720x480i compliant NTSC

Audio standard supported:
- MPEG-2, layer I
- MPEG-2, layer II

Decoder Output:
1 x SDI-SD Output
- Connector: BNC
- Input: 75 Ohm, 800mVpp (500 to 1200 mVpp)
- Standard: SMPTE 259M,292M

1 x RGB-SD (R,G,B) Outputs
- Connector: RCA

1 x CVBS-SD Output
- Composite Video Blanking Sync
- Connector: RCA

1x HDMI-HD/SD Output
- Connectors: HDMI Type A

1 x YUV-HD (Y,U,V) Outputs
- Connector: XLR

1 x YPbPr (Y, U, V) (HD)
- Connector: RCA

1 x Audio out (Left e Right)
- Connector: mini XLR

DVB-T2 DEMODULATOR FEATURES

DVB-T2 input monitoring provided	
DVB-T2 signal lock	
Carrier offset of the currently tuned channel	
SNR estimation made by the demodulator	
MER (Modulation Error Ratio) of the T2 demodulator	
Pre LDPC BER	
Pre-BCH BER	
Post BCH FER (FEC block error rate)	
The signal quality as a percentage (0-100)	
Active PLP information monitoring of data and common PLP for multiple PLP	
Data PLP error indicator	
L1 change indicator	
Synchronization state of the T2 demodulator	
L1 post lock	
Demodulated *estimated* DVB-T2 TS (Transport Stream) rate	
SI Field	S1 signalling. SISO/MISO indication
S2 Field	The pre-amble mixed indicator
	The FFT mode of transmission
L1-pre signaling	The stream type contained within the current T2 superframe
	BW extension indicator
	S1 signalling. P1 S1
	S2 signalling. P1 S2
	L1 repetition flag
	The guard interval used for the super-frame
	L1-pre PAPR (Peak to Average Power Ratio) indicator
	The L1-post modulation in this frame
	The L1-post code rate in this frame
	The L1-post FEC type
	Size of the L1-post in OFDM cells
	L1-post info size = L1-post configurable+dynamic+extension
	The pilot pattern for the OFDM symbols in this frame
	The TX Id
	The T2 cell Id
	The T2 network Id
	T2 system Id
	Number of T2-frames per T2 super-frame
	Number of OFDM symbols per T2-frame
	Regeneration count indicator
	L1-post extensions enabled
	The number of RF frequencies in use
	The current RF index
L1-post signaling	The number of sub-slices per T2 frame
	The number of PLPs in the current superframe
	Number of auxiliary streams
	Auxiliary stream config (Reserved for Future Use)
	Indicates the type of FEF part
	The length of the FEF as part of the elementary period
	The number of T2-frames between two FEF parts
PLP Loop	The PLP ID
	The type of the PLP
	The payload carried by the PLP
	The group of PLPs that this PLP belongs to
	The code rate of this PLP
	The constellation of this PLP
	Rotated constellation indicator
	The FEC type used on this PLP
	Maximum number of PLP blocks
	The T2 frame interval within the superframe of this PLP
	Time Interleaver length
	Time Interleaver type indicator
	In-band flag. Indicates whether PLP carries in-band signalling
	TS error flag
	TS sync flag
	TS valid flag

The following parameters are not supported by monitoring as along as Time-Frequency-Slicing (TFS) is not implemented. L1-pre signaling	T2 version
	RF Loop
	RF IDX
	Frequency
	PLP Loop
	First RF IDX
	First frame IDX
TS DVB descrambler	PID Filter (TBD)
	Each TSD can filter up to 32 configurable PIDs
	PID filter can check continuity counter
	PID filter can check TS packet syntax (Adaptation field length, adaptation field flags, etc.)
Supports all DVB-T2 modes, including	Single and multiple-PLPs
	SISO and MISO transmission
Simple API	Fully-automatic acquisition
	Fully-automatic L1-signalling decoding
	Automatic guard-interval detection
	Automatically-calculated constant-rate TS output (using L1 signalling and ISSY)
Stream processor for automatic common- and data-PLP combination	
Signal Analisys	Constallation plot
	Channel i,pulse response plot

DVB-T/H AND DVB-T2 RECEIVER

Tuner	Frequency range: Agile tuning of every frequency between42 and 866 MHz
	Band: VHF and UHF
	Channel bandwidth: 6, 7 and 8 MHz
	Reception optimized for UE CCIR digital channels
Supported standards	DVB - T/H - ETSI EN 300 744
	DVB - T2 - ETSI EN 300 755 v1.2.1_0.11(2009-2010)
	Complies with all European standards for static and portableequipment including NorDig Unified 2.0, DTG 6.1, Ebook
	Fully compliant with DTG6.1 and targeting NorDig-T2 addendumto Nordig Unified Requirements Ver2.1
Supported standards DVB-T demodulator features	Smart Auto Acquisition controller with fast 2k/8k acquisition, low processor overhead and re-acquisition mode
	Automatic spectral inversion
	Enhanced SFN perf. with pre/post-cursive echoes inside/outside guard
	Enhanced Impulse noise cancellation algorithm compliant with DTG & Ebook
	Enhanced ACI protection and performance with CCI
	Advanced channel corrector for low multipath loss and enhanced Doppler performance

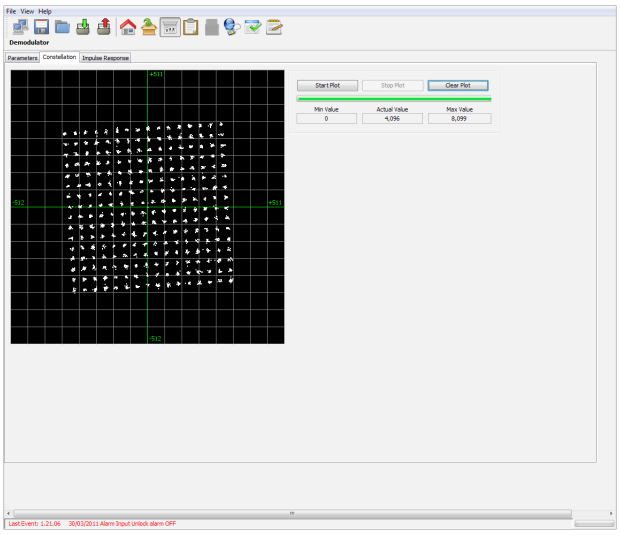
HARDWARE CONNECTORS

RF input to the device	
N° input	1
Connector type	LNB (female)
R input	75 Ω
V input	16 dBuV to 115 dBuV
Frequency	42 to 866 MHz
Smart-card input	
N° input	1
Connector type	PCMCIA
N° connectors	1
Connector	RJ45
Standard supported	IEEE 802.3
TS output from the system	
N° Output	1
Connector type	MCX
R input	75 Ω
V input	800 mVpp (500 to 1200mVpp)
Standard	CEI EN 50083-9

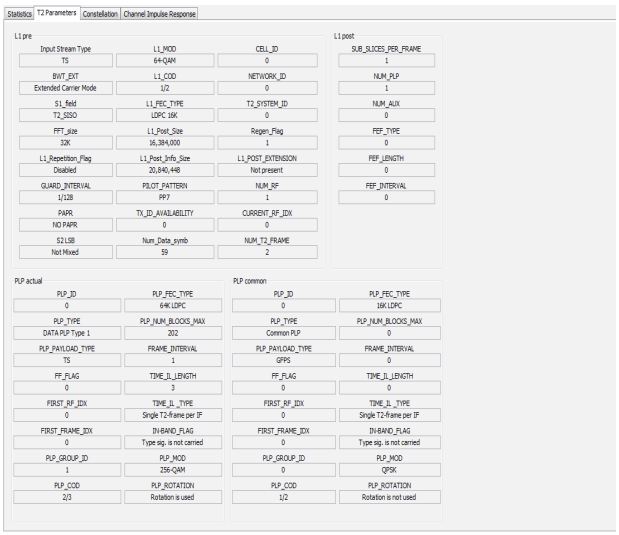
DECODER FEATURES

SD-SDI-OUT	Connector Used as output to the systems
	N° Outputs: 1
	Connector: BNC
	R Input: 75 Ohm
	V Input: 800 mVpp (500 to 1200 mVpp)
	Standard: SMPTE 259M,292M
RGB -SD-OUT	Connector Used as output to the systems
	N° Outputs: 3 (R, G, B)
	Connector: RCA
	R Input
	V Input
	Standard
CVBS -SD-OUT	Connector Used as output to the systems
	N° Outputs: 1
	Composite Video Blanking Sync
	Connector: RCA
	R Input
	V Input
	Standard
HDMI (HD/SD) OUT	Connector Used as output to the systems
	N° Outputs: 1
	Connectors: HDMI Type A
YUV (HD)	Connector Used as output to the systems
	N° Inputs: 3 (Y, U, V)
	Connector: RCA
	R Input: -
	V Input: -
	Standard: -
Audio (Out)	Audio connector
	Connettori audio
	N° Outputs: 2 (Usati per Left e Right)
	Connector: 2 pin su scheda
	R Input:V Input
	Standard

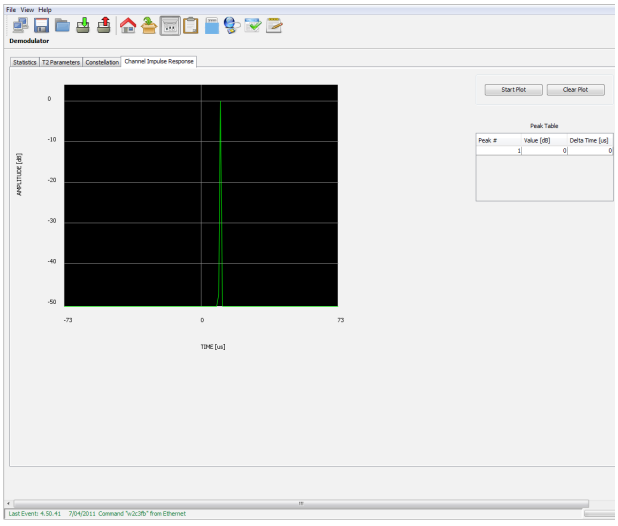
Power Supply
Dual Power Supply (only in 1+1 or 2+0 configuration)
110/220V AC Autoswitching
48V DC



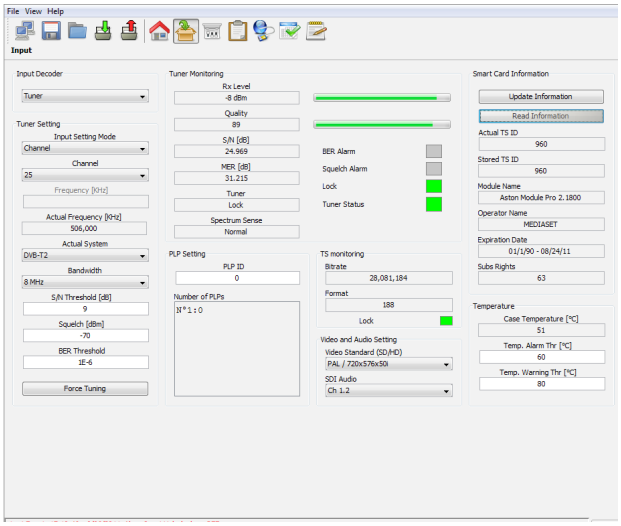
Demoulator - Costellation



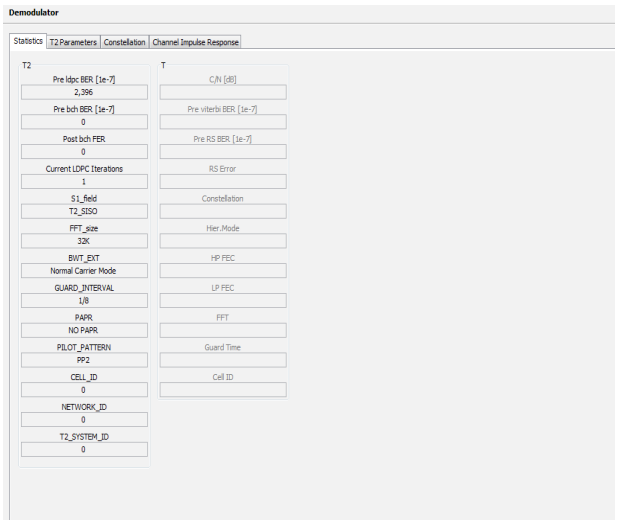
Demoulator - T2 parameters



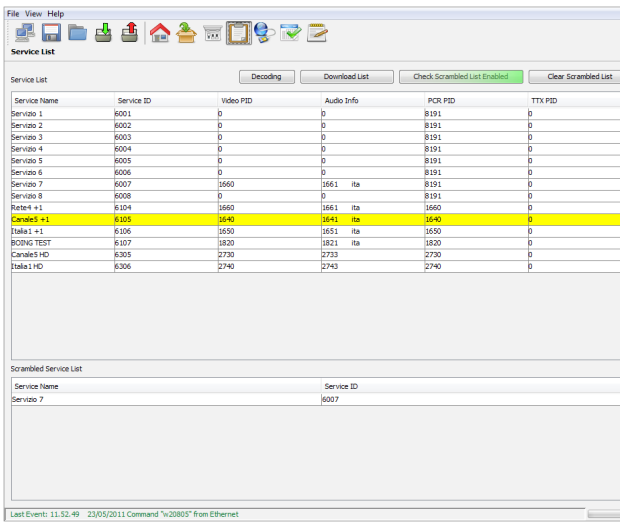
Demodulator - Impulse Response



Input



Demodulator - Statistcs



Service list